

AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double brackets indicating deletions.

Listing of the Claims

1. (Currently Amended) An integrated cell searcher comprising:
 - a first code generator which generates first codes for cell searching in a non-synchronous mode;
 - a second code generator which generates second codes for cell searching in a synchronous mode;
 - a signal selector which receives the first codes and the second codes, buffers the first codes and the second codes, then selectively outputs either of the first codes or second codes, in response to a mode selection signal; wherein the signal selector comprises:
 - a plurality of N-bit registers which receive and buffer the first codes in parallel;
 - a plurality of multiplexers which selectively output ~~ones~~codes from among the first codes stored in the N-bit registers in synchronization with a clock signal; and
 - a plurality of selectors which selectively output either the selected ~~ones~~codes of the first codes or the second codes, in response to the mode selection signal; and
 - a plurality of correlators which receive and correlate a code from a base station with the selected codes output from the plurality of selectors, respectively.

2. (Original) The integrated cell searcher of claim 1, wherein the first codes, second codes and code from the base station are pseudonoise (PN) codes.

3. (Previously Presented) The integrated cell searcher of claim 1, wherein each of the plurality of correlators further comprises:

a despreader which despreads the code received from a base station correlating with the codes output from the signal selector and outputs a desreading result;

a synchronization accumulative register which receives signals from the despreader, accumulates the received signals in synchronization with a clock signal, and stores an accumulation result;

an energy converter which converts a signal output from the synchronization accumulative register into an energy signal; and

a non-synchronization accumulative register which accumulates signals output from the energy converter and stores an accumulation result.

4. (Previously Presented) The integrated cell searcher of claim 1 further comprising:

a peak detector which receives correlation results from the correlators and identifies which among the selected codes output from the plurality of selectors yielded the best correlation.

5. (Currently Amended) An integrated cell searcher comprising:

a first code generator which generates first codes for cell searching in a first communication mode;

a second code generator which generates second codes for cell searching in a second communication mode;

a signal selector which receives, buffers, then selectively outputs the first codes and the second codes in response to a mode selection signal; wherein the signal selector comprises:

a plurality of N-bit registers which receive and buffer the first codes in parallel;

a plurality of multiplexers which selectively output ~~ones~~codes from among the first codes stored in the N-bit registers in synchronization with a clock signal; and

a plurality of selectors which selectively output either the selected ~~ones~~codes of the first codes or the second codes, in response to the mode selection signal; and

a plurality of correlators which receive and correlate a code from a base station with the selected codes output from the plurality of selectors, respectively.

6. (Original) The integrated cell searcher of claim 5, wherein the first codes, second codes and code from the base station are pseudonoise (PN) codes.

7. (Original) The integrated cell searcher of claim 5, wherein the first mode corresponds to UTMS and the second mode corresponds to CDMA.

8. (Original) The integrated cell searcher of claim 5 wherein the plurality of correlators are caused to perform cell searching for the first communication mode or the second communication mode depending on whether the first codes or the second codes are selected by the signal selector.

9. (CANCELLED)

10. (Previously Presented) The integrated cell searcher of claim 5, wherein a clock signal has an N times higher frequency than a nominal clock signal of a multi-mode modem with which the integrated cell searcher can be used.

11. (Previously Presented) The integrated cell searcher of claim 5, wherein each of the correlators comprises:

a despreader which despreads the code received from the base station correlating with the selected codes from the signal selector and outputs a despreading result;

a synchronization accumulative register which receives signals from the despreader, accumulates the received signals in synchronization with a clock signal, and stores an accumulation result;

an energy converter which converts a signal output from the synchronization accumulative register into an energy signal; and

a non-synchronization accumulative register which accumulates signals output from the energy converter and stores an accumulation result.

12. (Previously Presented) The integrated cell searcher of claim 5 further comprising:

a peak detector which receives signals from the correlators and identifies which among the selected codes output from the selector yielded the best correlation.

13. (Currently Amended) An integrated cell searcher of a dual mode modem, which supports first and second communication modes, the integrated cell searcher comprising:

first code means for generating first pseudonoise codes used in a first communication mode cell searching process;

second code means for generating second PN codes, used in a second communication mode cell searching process;

PN selection means for receiving the first PN codes and second PN codes, buffering the first PN codes and second PN codes, and then selectively outputting the first PN codes or the second PN codes in response to a mode selection signal; wherein the PN selection means comprise:

a plurality of N-bit registers which receive and buffer the first PN codes in parallel;

a plurality of multiplexers which selectively output ~~ones~~codes from among the first PN codes stored in the N-bit registers in synchronization with a clock signal; and

a plurality of selectors which receive and selectively output either the selected ~~ones~~codes of the first PN codes or the second PN codes, in response to the mode selection signal; and

correlator means for correlating a code signal received from a base station with the selected PN codes output from the plurality of selectors, respectively.

14. (Currently Amended) A method for cell searching using a dual mode modem comprising:

generating first codes for cell searching in a first mode;

generating second codes for cell searching in a second mode;

receiving the first codes and second codes, buffering the first codes and second codes, and then selecting between either the first codes or the second codes in response to a mode selection signal; wherein receiving further comprises:

receiving and buffering the first codes at a plurality of N-bit registers in parallel;

selectively outputting ~~ones~~codes from among the first codes stored in the N-bit registers in synchronization with a clock signal from a plurality of multiplexers; and

receiving and selectively outputting either the selected ~~ones~~codes of the first codes or the second codes, in response to the mode selection signal at a plurality of selectors; and

correlating a code from a base station and the selected codes output from the plurality of selectors. [[.]]

15. (Previously Presented) The method for cell searching using dual mode modem according to claim 14, wherein the correlating step further comprises:

despreading the codes received from a base station with the selected codes and outputting a despreading result;

accumulating multiple instances of the despreading result in synchronization with a clock signal and storing an accumulation result;

converting the accumulation result into an energy signal;

accumulating multiple instances of the energy signal; and

storing an accumulation result.

16. (Original) The method for cell searching according to claim 14 further comprising:

operating upon the correlation results to identify which among the selected codes yielded a best correlation; and
outputting a detection result.

17. (Previously Presented) The method for cell searching according to claim 14 wherein the first codes, second codes, and code from the base station are pseudonoise (PN) codes.

18. (Original) A method for cell searching according to claim 14 wherein the first mode is a non-synchronous mode and the second mode is a synchronous mode.

19. (Original) A method for cell searching according to claim 14 wherein the first mode corresponds to UMTS and the second mode corresponds to CDMA.

* * * * *

END OF CLAIM LISTING